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STREET LIGHT
BRACKETS AND CENTER
SPAN FIXTURES

FOR

MAZDA LAMPS



GENERAL ELECTRIC COMPANY
SCHENECTADY NEW YORK



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GENERAL ELECTRIC COMPANY
SCHENECTADY NEW YORK

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SERIES BRACKETS AND FIXTURES FOR INCANDESCENT STREET LIGHTING

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GENERAL

SERIES BRACKETS AND FIXTURES FOR INCANDESCENT STREET LIGHTING

The astute purchaser of street lighting brackets and fixtures buys for illuminating quality, safety, durability and appearance; the relative importance of these features being in approximately the order named. The following brief description will indicate how well these demands are met by the line of material manufactured by the General Electric Company.

ILLUMINATING QUALITIES

Generally speaking, streets are lighted by one of two methods assuming that conditions require an average mounting of 15 to 18 ft.

First, low candle-power lamps with a comparatively close spacing.

Second, higher candle-power lamps with a wider spacing.

For the first class of street lighting which covers installations of 40, 60, 80 or 100 c-p. MAZDA series lamps, we recommend the radial wave reflector for spacings of 150 ft. or less, the dome radial wave reflector for spacings of over 150 ft.; and the Holophane prismatic band refractor as an alternative to the latter for extreme spacings.

For the second class where 250 or 400 c-p. lamps are used, we recommend dome radial wave reflectors for spacings of less than 200 ft. and the refractors for all greater spacings.

The radial wave reflector gives a fair amount of light at the higher angles with more light toward the vertical and is very satisfactory for close spacings.

The dome radial wave reflector gives its maximum light at the 10 degree angle with a fair amount under the lamp and tends toward uniform intensities from one lamp to the other even at comparatively wide spacings. See description under Durability.

The Holophane prismatic band refractor accomplishes the same results as the dome radial wave reflector except in a more marked degree, giving most of its light at the 10 degree angle.

It permits relatively wide spacing between lamps and gives sufficient lighting underneath the lamp to meet the requirements of the two types of reflecting road surfaces; asphalt pavements and oil-treated roads with a polished surface giving a high degree of specular reflection; granite block pavements and dirt roads, absorbing most of the light but reflecting a little diffusely.

The importance of meeting the requirements of modern road surfaces, as outlined above, is becoming recognized more and more by illuminating engineers, for it means the attainment of proper silhouetting which is now recognized as foremost in the process of "seeing."

ILLUMINATING QUALITIES (Cont'd)

In the General Electric line there is a lamp and a light directing device for every possible condition of street lighting service.

In any case, the position of the filament in relation to the reflecting surface is most important. If the filament is too far away from the reflector more light is thrown directly under the lamp, less light is projected at the angles best suited for street illumination and a considerable portion of light is thrown above the horizontal where it is not only useless for the illumination of the street, but is a source of annoyance to residents.

On the other hand, if the filament is too close to the reflector more light is absorbed and the spherical efficiency of the unit is seriously reduced without improving the distribution.

In the General Electric units the position of the light source with respect to the reflector has been very carefully computed and verified by the Illuminating Engineering Laboratories of the General Electric Company at Schenectady, N. Y.; Lynn, Mass.; Cleveland, Ohio and Harrison, N. J.

SAFETY

"Safety First" was uppermost in the minds of the designing engineers of this line of fixtures, and the factor of safety is 100 per cent.

Our main insulator is the principal factor that makes toward absolute safety. It will withstand voltage strains up to 25,000 volts. It interposes a maximum insulation between current carrying parts. It has great mechanical strength because it is composed of only one massive porcelain. This form of design eliminates the use of a number of small insulators; combines lightness with great strength for there is no waste material where not needed and there is ample cross section at all parts subjected to strains. There are no projecting parts that are not sufficiently strong to withstand severe service.

These insulators are made of the highest grade of dry process porcelain with a uniform heavily glazed surface of remarkable dielectric strength. The high pressure under which these are formed and the care taken in drying and firing them ensures a homogeneous structure free from cracks or flaws and perfectly hygroscopic.

A most salient point in the design of the insulator is that it also acts as a spreader arm for the leads. No unsightly cross arms with small additional insulating bushings are required. For open wiring, it is simply necessary to bring the leads directly to the tying ears on the insulator and then through the porcelain to the interior binding posts. For concealed wiring the leads can be brought through the bracket pipe, through the hood into the top of the insulator and then to the binding posts.

The binding posts are heavy brass castings each one equipped with two phosphor-bronze screws to prevent the possibility of loose connections, open circuits or grounds.

APPEARANCE

The General Electric Company's brackets and fixtures are simple and unobtrusive in appearance but have character in every line. The large number of designs permit a selection which will harmonize with the thoroughfare whether it be a residential street, a park or a suburban road.

DURABILITY

The materials used in the manufacture of this line are of the highest quality and the finish of each part has been carefully selected. These features allow a maximum life for the bracket or fixture and careful exacting workmanship ensures the interchangeability of the parts.

Their mechanical strength also assists in making them durable. For example, the reflector is held by four sherardized steel clips operated by a phosphor-bronze screw. In reality these clips are miniature vises which hold the reflector with a positive grip that does not mar the enameled surface.

The reflectors are heavily enameled, both upper and lower surfaces with a highly glazed reflecting surface. In a low candle-power lamp this is in many cases objectionable for the downward light cannot be spared without getting too low an intensity directly underneath the lamp. The Holophane prismatic band refractor corrects this condition as the downward light is permitted to escape.

When lighted, the refractor presents a beautiful appearance and, combining as it does, the advantages of the refractor with its remarkable widespread light distribution (a distribution that would only be obtained by a reflector many feet in diameter) and excellent illumination beneath the lamp, it approaches the ideal for the class of illumination where incandescent brackets and center span fixtures are ordinarily used.

The refractor holder is hinged to the spun dome and is held in closed position by an automatic spring latch.

ECONOMICAL MAINTENANCE

It is interesting to note that reports concerning the thousands of Holophane prismatic refractors in active service show that breakage is practically negligible.

Mechanically, the band refractor possesses a great many features, among these may be mentioned the following:

Ventilation. As the lower part of the refractor is entirely open, perfect ventilation of the lamp is assured.

Bugproof. The bugproofing problem is happily solved for there is no place for bugs to collect due to the open base. For this same reason there is no diminution of light due to a collection of insects.

DOME REFLECTOR

One of the most recent developments is the 20-in. radial wave reflector having a large handhole to enable the socket and lamp to be easily removed as a unit. This dome not only adds to the appearance of the reflector but it provides reflecting surface for every ray of light above the horizontal. The interior is white enameled even above the socket so that the only light lost is the light cut off by the lamp base—a negligible percentage.

An additional feature of this reflector is the fact that the edge of the rim is turned over and then enameled. This rolled edge prevents splitting of the enamel during handling or operation and makes the reflector absolutely rustproof.

HOLOPHANE BAND REFRACTOR

The band refractor is a development of the prismatic refractor which was placed on the market a few months ago and marked the greatest advance ever made in a device for controlling the direction of light. It consists of two clear glass bands one of which fits snugly inside of the other. The joints are sealed to make a weatherproof union. The inner part is girdled on its outer surface by horizontal prisms which refract the light from the source at an angle of 10 degrees below the horizontal. The outer part has vertical diffusing prisms on its inner surface for the purpose of spreading the light rays transversely and making the refractor luminous over its entire surface. The two prismatic surfaces come close together when the parts are sealed and the inner and outer surfaces of the complete refractor are entirely smooth.

The distribution curve shows that there is a low intensity under a low candle-power unit equipped with a bowl refractor. The reason for this is that the complete refractor redirects a large percentage of the upward and downward light to the 10 degree angle.

Liberal Hand Room. The refractor being hinged, it is easily lowered and the liberal hand room in the dome interior facilitates the removal of the lamp and socket as a unit and makes the cleaning of the refractor very easy.

Small Size. The small size and the shape of the canopy prevent snow and ice collecting on it.

The smaller size also offers a smaller mark for malicious breakage.

SUMMARY

Street lighting fixtures represent a permanent investment. They are bought for tomorrow as well as today and the points just mentioned are of the utmost importance.

The fixture must be an efficient illuminant; efficient because no unnecessary light should be wasted by either misdirection or absorption and because the distribution must be such that with average heights and spacings, a uniform and effective intensity of illumination will result.

SUMMARY (Cont'd)

The fixture must be safe; not only safe under ordinary conditions but with sufficient insulation and mechanical strength to allow continuity of service under unusual electrical disturbances or mechanical strains.

The system must be durable for it is in continuous service for years. The material of which it is constructed must be without flaws or defects. There must be as few parts as possible to simplify maintenance costs and each part must not only contribute to the strength of the unit but must also be sufficiently strong in itself to withstand accidental strains. The workmanship must be exact and the inspection rigid for the qualities are most important in their effect on the condition of the unit after years of hard service.

Finally, the appearance of the fixture or bracket should be pleasing. The finish of the parts should perform an ornamental as well as a protective function, and the general lines of the unit should harmonize with the surroundings, whether a residential street, a park or a suburban road.

A careful analysis shows how well the line of brackets and fixtures manufactured by the General Electric Company fits these requirements for the exacting service of street lighting.

ILLUSTRATIONS



RIGHT ANGLE BEND SERIES BRACKET EQUIPPED WITH CAT. NO. 46219, 20-IN. RADIAL WAVE REFLECTOR

ILLUSTRATIONS



RIGHT ANGLE BEND SERIES BRACKET EQUIPPED WITH PAT. NO. 74270, 20-IN. DOME RADIAL WAVE REFLECTOR

ILLUSTRATIONS



RIGHT ANGLE BEND SERIES BRACKET EQUIPPED WITH CAT. NO. 174273, 6 1/2-IN. HOLOPHANE BAND REFRACTOR

ILLUSTRATIONS



RIGHT ANGLE BEND SERIES BRACKET EQUIPPED WITH CAT. NO. 174976 8 1/2-IN. HOUSING AND BURNER BRACKET

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ILLUSTRATIONS



Fig. 1. Mechanical device for testing purposes. (See page 14 for details.)
BELL AND HOWELL COMPANY



Fig. 2. Mechanical device for testing purposes. (See page 14 for details.)
BELL AND HOWELL COMPANY

ILLUSTRATIONS



EYE SUSPENSION SERIES FIXTURE EQUIPPED WITH CAT. NO. 17427,
6½-IN. HOLOPHANE PRISMATIC BAND REFRACTOR







EYE SUSPENSION SERIES FIXTURE EQUIPPED WITH CAT. NO. 174276,
8½-IN. HOLOPHANE PRISMATIC BAND REFRACTOR

DATA

SERIES BRACKETS



Bishop's Crook, 1 1/4 In. Pipe Bracket, External or Concealed Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)		
	C-P.	Cat. No.		Approx. Ship. Wt. per 20 Brackets
	Cat. No. 46219, 20 in. radial wave reflector	40 60 80 100	114979	675
	Cat. No. 174270, 20 in. dome radial wave re- flector. . . .	40 60 80 100 250 400	174280	675
	Cat. No. 174273, 6 3/4 in. Holo- phane prismatic band refractor with holder . .	40 60 80 100	174281	760
	Cat. No. 174276, 8 3/4 in. Holo- phane prismatic band refractor with holder . .	250 400	174282	845





Standard finish, black japan; galvanized iron finish can be had on order.

For details of sockets and reflectors see Pages 48 to 51.

SERIES BRACKETS



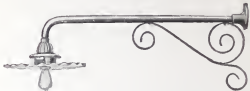
Double Bend, 1 1/4 In. Pipe Bracket, External or Concealed Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	C-P.	Cat. No.	Approx. Ship. Wt. per 20 Brackets
	Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 60 80 100 }	103156
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	{ 40 60 80 100 250 400 }	174284
	Cat. No. 174273, 6 1/2 in. Holo- phane prismatic band refractor with holder....	{ 40 60 80 100 }	174285
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder....	{ 250 400 }	174286





Standard finish, black japan; galvanized iron finish can be furnished.

For details of-sockets and reflectors see Pages 48 to 51.

SERIES BRACKETS



Right Angle Bend, 1 1/4 In. Pipe Bracket,
External or Concealed Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
		Cat. No.	Appr. Ship. per Brack
	Cat. No. 46219, 20 in. radial wave reflector.....	<div>40 60 80 100</div>	105691
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	<div>40 60 80 100 250 400</div>	174288
	Cat. No. 174273, 6 1/2 in. Holo- phane prismatic band refractor with holder....	<div>40 60 80 100</div>	174289
	Cat. No. 174276, 8 1/2 in. Holo- phane prismatic band refractor with holder....	<div>250 400</div>	174290





Standard finish, black japan; galvanized iron finish can
furnished.

For details of sockets and reflectors see Pages 48 to 51.

SERIES BRACKETS



Right Angle Joint, 1 1/4 In. Pipe Bracket, 48 In.
Extension, External or Concealed Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)		
	C-P.	Cat. No.	Approx. Ship. Wt. per 20 Brackets	
	Cat. No. 46219, 20 in. radial wave reflector.....	<div> <div>{</div> <div>40</div> <div>60</div> <div>80</div> <div>100</div> <div>}</div> </div>	103157	700
	Cat. No. 174270, 20 in. dome radial wave re- flector	<div> <div>{</div> <div>40</div> <div>60</div> <div>80</div> <div>140</div> <div>250</div> <div>400</div> <div>}</div> </div>	174292	700
	Cat. No. 174273, 6 1/4 in. Holo- phane prismatic band refractor with holder....	<div> <div>{</div> <div>40</div> <div>60</div> <div>80</div> <div>100</div> <div>}</div> </div>	174293	785
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder....	<div> <div>{</div> <div>250</div> <div>400</div> <div>}</div> </div>	174294	870





Standard finish, black japan, galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

SERIES BRACKETS



Ornamental Goose Neck, 3, 4 In. Pipe Bracket,
with Petticoat Insulator, External Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
		Cat. No.	Approx. Ship. Wt. per Unit Bracket
	Cat. No. 46219, 20 in. wide wave reflector	40 60 80 100	46219
	Cat. No. 174290, 20 in. wide petticoat wave re- flector	40 60 80 100 200 400	
	Cat. No. 174291, 6 in. wide petticoat wave re- flector with holder	40 60 80 100	174290
	Cat. No. 174292, 6 in. wide petticoat wave re- flector with holder	200 400	





Manufactured in Japan, galvanized iron finish and
permanently painted.

For details of brackets and reflectors see Pages 48 to 51

SERIES BRACKETS



Right Angle Joint, 1 1/4 In. Pipe Bracket, 20 In.
Extension, External or Concealed Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)			
	C.P.	Cat. No.	Approx- ship Wt per 20 Bracket		
	Cat. No. 46219, 20 in. radial wave reflector	40 60 80 100	111856	650	
	Cat. No. 174270, 20 in. dome radial wave re- flector	40 60 80 100 250 400	174300	650	
	Cat. No. 174271, 6 1/2 in. Holo- phane prismatic band refractor with holder	40 60 80 100	174301	700	
	Cat. No. 174276, 8 1/2 in. Holo- phane prismatic band refractor with holder	250 400	174302	820	





Standard finish, black japan; galvanized iron mesh furnished.

For details of sockets and reflectors see Pages 48 to 51

SERIES BRACKETS



Goose Neck, 3/4 In. Pipe Bracket, External Wiring

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
		Cat. No.	Appr. Ship. per Brack
	Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 60 80 100 }	114768
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	{ 40 60 80 100 250 400 }	174304
	Cat. No. 174273, 6 1/4 in. Holo- phane prismatic band refractor with holder....	{ 40 60 80 100 }	174305
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder....	{ 250 400 }	174306





Standard finish, black japan; galvanized iron finish can furnished.

For details of sockets and reflectors see Pages 48 to 51.

SERIES BRACKETS



Plain Goose Neck, 3/4 In. Pipe Bracket with Petticoat Insulator, External Wiring

EQUIPPED WITH	FIN. (WITH LAMP)	COMPLETE UNIT (LAMP)	
		Cat. No.	Approx. W. in lbs.
 Cat. No. 174312 Plain, 1/2 in. pipe bracket with petticoat insulator	1/2 in. pipe bracket with petticoat insulator	174312	100
 Cat. No. 174308 Plain, 1/2 in. pipe bracket with petticoat insulator	1/2 in. pipe bracket with petticoat insulator	174308	100
 Cat. No. 174309 Plain, 1/2 in. pipe bracket with petticoat insulator and reflector	1/2 in. pipe bracket with petticoat insulator and reflector	174309	110
 Cat. No. 174310 Plain, 1/2 in. pipe bracket with petticoat insulator and reflector	1/2 in. pipe bracket with petticoat insulator and reflector	174310	110





Standard finish, black japanned; galvanized iron finish and brass finish.

For details of sockets and reflectors see Pages 18-22.

SERIES BRACKETS



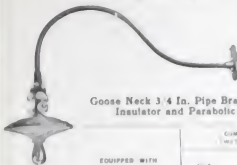
Telescoping $3/4$ and $1\ 1/4$ In. Pipe Bracket, External Wiring—4 to 7 Ft. Extension

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	C.P.	Cat. No.	At Sho- p Br.
	Cat. No. 46219, 20 in. radial wave reflector	40 60 80 100	174311
	Cat. No. 174270, 20 in. dome radial wave reflector	40 60 80 100 250 400	174312
	Cat. No. 174273, $6\ 1/4$ in. Holo plane prismatol band refractor with holder	40 60 80 100	174314
	Cat. No. 174276, $8\ 1/4$ in. Holo plane prismatol band refractor with holder	250 400	174315

Standard finish, black japan, galvanized iron finish on
Coppered

For details of sockets and reflectors see Pages 48 to 51

SERIES BRACKETS



Goose Neck 3/4 In. Pipe Bracket, Petticoat Insulator and Parabolic Deflector

EQUIPPED WITH	COMPLETE UNIT (WITHOUT LAMP)	
	Cat. No.	Approx. Wt. per ft. Structure
Copper horn and deflector for 1 1/2 in. base lamp	10342	375



EQUIPPED WITH	COMPLETE UNIT (WITHOUT LAMP)	
	Cat. No.	Approx. Wt. per ft. Structure
Galvanized iron horn and deflector for 1 1/2 in. base lamp	11449	375





Standard finish, black japan galvanized steel. Ready for use for outdoor.

For insulator sockets and reflectors see Pages 18 & 41

SERIES FIXTURES



Eye Suspension Center Span Fixture with Cross Arm Insulator Hanger

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)		
	C-P.	Cat. No.	Appx. Ship- per Fixtu	
	Cat. No. 46219, 20 in. radial wave reflector.....	<div>{ 40 60 80 100 }</div>	74810	42
	Cat. No. 174270, 20 in. dome radial wave re- flector	<div>{ 40 60 80 100 250 400 }</div>	174317	42
	Cat. No. 174273, 6½ in. Holo- phane prismatic band refractor with holder ...	<div>{ 40 60 80 100 }</div>	174318	50
	Cat. No. 174276, 8½ in. Holo- phane prismatic band refractor with holder	<div>{ 250 400 }</div>	174319	59

Standard finish, black japan; galvanized iron finish can be furnished.





For details of sockets and reflectors see Pages 48 to 51.

For omission of hanger, a deduction from price is made.

SERIES FIXTURES



Strain Insulator Center Span Suspension

EQUIPPED WITH	FIXTURE LAMP	COMPLETE UNIT (EXCLUDING LAMP)	
		Cat No	Price
	174320, 4000W, 400V radial wave reflector	174320	\$1.00
	174321, 4000W, 400V radial wave reflector	174321	\$1.00
	174322, 4000W, 400V radial wave reflector with bottom	174322	\$1.00
	174323, 4000W, 400V radial wave reflector with bottom	174323	\$1.00





Standard Room, Black, white, galvanized (only) units are available.

For details of sockets and reflectors see Page 18 & 19.

SERIES FIXTURES



Cross Arm Suspension

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	C-P.	Cat. No.	Approx. Ship. Wt. per 20 Fixture
	Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 60 80 100 }	103188
	Cat. No. 174270, 20 in. dome radial wave re- flector.	{ 40 60 80 100 250 400 }	174325
	Cat. No. 174273, 6 1/4 in. Holo- phane prismatic band refractor with holder....	{ 40 60 80 100 }	174326
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder....	{ 250 400 }	174327





Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

SERIES FIXTURES



Cross Arm Suspension with Petticoat Insulator

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
		Cat. No.	Approx. ship Wt. per 20 Pictures
	Cat. No. 46219, 20 in. radial wave reflector.	40	45088
	60	60	
	80	80	
	100	100	
	Cat. No. 174270, 20 in. dome radial wave re- flector	40	174329
	60	60	
	80	80	
	100	100	
	Cat. No. 174273, 6 1/4 in. Holo- phane prismatized band refractor with holder	40	174330
	60	60	
	80	80	
	100	100	
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatized band refractor with holder	200	174331
	400	400	





Standard finish, black japan, galvanized iron finish on the outside.

For details of sockets and reflectors see Pages 48 to 51.

SERIES FIXTURES



Eye Suspension

EQUIPPED WITH	FOR SERIES LAMPS	COMPLETE UNIT (WITHOUT LAMP)		
		C-P.	Cat. No.	App. Ship per Fixt.
	Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 60 80 100 }	103159	3
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	{ 40 60 80 100 250 400 }	174333	3
	Cat. No. 174273, 6 1/2 in. Holo- phane prismatic band refractor with holder...	{ 40 60 80 100 }	174334	4
	Cat. No. 174276, 8 1/2 in. Holo- phane prismatic band refractor with holder ..	{ 250 400 }	174335	5

Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

SERIES FIXTURES



CAT. NO. 36555



CAT. NO. 34928

Cross Arm Suspension Fixtures with Parabolic Deflectors

EQUIPPED WITH	COMPLETE UNIT (WITHOUT LAMP)	
	Cat. No.	Approx. Ship. Wt. per 20 Fixtures
Copper hood and deflector for 1½ in. base lamp.....	36555	225
Galvanized iron hood and deflector for 1½ in. base lamp	34928	225


Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Bishop's Crook, 1 1/4 In. Pipe Bracket, Concealed Wiring

EQUIPPED WITH	FOR MUL- TIPLE LAMPS	COMPLETE UNIT (WITHOUT LAMP)		
		Cat. No.	Appro. Ship. V. per 2 Brack	
	Watts			
	Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 } 60	161339	675
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	{ 100 } 200	174337	675
	Cat. No. 174273, 6½ in. Holo- phane prismatic band refractor with holder. . .	{ 100 } 200	174338	760
	Cat. No. 174276, 8½ in. Holo- phane prismatic band refractor with holder. . .	{ 300 } 400 500	174339	845





Standard finish, black japan; galvanized iron finish can furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Double Bend, 1 1/4 In. Pipe Bracket, Concealed Wiring

EQUIPPED WITH	FOR MUL- TIPLE LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	Watts	Cat. No.	Approx. Ship. Wt. per 20 Brackets
 Cat. No. 46219, 20 in. radial wave reflector.....	{ 40 60 }	152822	800
 Cat. No. 174270, 20 in. dome radial wave reflector.....	{ 100 200 }	174341	800
 Cat. No. 174273, 6 1/4 in. Holo-phane prismatic band refractor with holder....	{ 100 200 }	174342	885
 Cat. No. 174276, 8 1/4 in. Holo-phane prismatic band refractor with holder....	{ 300 400 500 }	174343	970





Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Right Angle Joint, 1 1/4 In. Pipe Bracket, 48 In.
Extension, Concealed Wiring

EQUIPPED WITH	FOR MUL- TIPLE LAMPS		COMPLETE UNIT (WITHOUT LAMP)	
	Watts		Cat. No.	Ap- pli- ca- tion
	Cat. No. 46219, 20 in. radial wave reflector.....	40 60	161356	
	Cat. No. 174270, 20 in. dome radial wave re- flector.....	{ 100 200 }	174349	
	Cat. No. 174273, 6 1/2 in. Holo- phane prismatic band refractor with holder....	{ 100 200 }	174350	
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder...	{ 300 400 500 }	174351	





Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Right Angle Bend, 1 1/4 In. Pipe Bracket,
Concealed Wiring

EQUIPPED WITH	FOR MULTIPLE LAMPS		COMPLETE UNIT (WITHOUT LAMP)	
	Watts	Cat. No.	Approx. Ship. Wt. per 20 Brackets	
 <p>Cat. No. 46210, 20 in. radial wave reflector</p>	40 60	161360	675	
 <p>Cat. No. 174270, 20 in. diam. radial wave reflector</p>	100 200	174346	675	
 <p>Cat. No. 174271, 20 in. diam. plane parallel band reflector with holder</p>	100 200	174346	760	
 <p>Cat. No. 174276, 20 in. diam. plane parallel band reflector with holder</p>	100 200 300	174347	845	





Standard finish, black japan, galvanized iron (black iron) or enamel.

For details of sockets and reflectors see Pages 18 and 19.

MULTIPLE BRACKETS



Ornamental Goose Neck, 3/4 In. Pipe Bracket,
with Petticoat Insulator, External Wiring

EQUIPPED WITH	FOR MULTIPLE LAMPS		COMPLETE UNIT (WITHOUT LAMP)	Ap- pli- ca- tion
	Watts	Cat. No.	Cat. No.	
	Cat. No. 46219. 20 in. radial wave reflector.....	{ 40 60 }	125322	General illumination of large open spaces and high ceilings
	Cat. No. 174270. 20 in. dome radial wave re- flector.....	{ 100 200 }	174353	
	Cat. No. 174273. 6 1/4 in. Holo- graph prismatic band refractor with holder....	{ 100 200 }	174354	
	Cat. No. 174276. 8 1/4 in. Holo- graph prismatic band refractor with holder....	{ 300 400 500 }	174355	

Standard finish, black japan; galvanized iron finish ca
furnished.

For details of sockets and reflectors see Pages 48 to 51

MULTIPLE BRACKETS



Right Angle Joint, 1 1/4 in. Pipe Diameter, 7/8 in. Extension, Curved Wing

DESCRIPTION	UNIT PRICE	QUANTITY ORDERED	
		PER UNIT	TOTAL
1. 1 1/4 in. Pipe Diameter, 7/8 in. Extension, Curved Wing	100.00	100.00	100.00
2. 1 1/4 in. Pipe Diameter, 7/8 in. Extension, Curved Wing	100.00	100.00	100.00
3. 1 1/4 in. Pipe Diameter, 7/8 in. Extension, Curved Wing	100.00	100.00	100.00
4. 1 1/4 in. Pipe Diameter, 7/8 in. Extension, Curved Wing	100.00	100.00	100.00





Approved by the Board of Directors, January 1, 1910.

The prices of materials and labor are subject to change.

MULTIPLE BRACKETS



Plain Goose Neck, 3/4 In. Pipe Bracket, with
Petticoat Insulator, External Wiring

EQUIPPED WITH	FOR MUL- TIPLE LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
		Cat. No.	Appr. Ship. 1/2 per 1 Bracket
	Cat. No. 46219, 20 in. radial wave reflector	125323	52
	{ 40 } { 60 }		
	Cat. No. 174270, 20 in. dome radial wave re- flector	174361	52
	{ 100 } { 200 }		
	Cat. No. 174273, 6 3/4 in. Holo- phane prismatic band refractor with holder	174362	61
	{ 100 } { 200 }		
	Cat. No. 174276, 8 1/4 in. Holo- phane prismatic band refractor with holder . . .	174363	69
	{ 300 }		
	{ 400 } { 500 }		





Standard finish, black japan; galvanized iron finish can
furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Telescoping $3/4$ and $1\ 1/4$ In. Pipe Bracket, External Wiring—4 to 7 Ft. Extension

EQUIPPED WITH	FOR MUL- TIPLE LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	Watts	Cat. No.	Appr. Ship. per Brack
	Cat. No. 46219, 20 in. radial wave reflector..... { 40 60 }	174368	87
	Cat. No. 174270, 20 in. dome radial wave reflector..... { 100 200 }		
	Cat. No. 174273, $6\ 3/4$ in. Holophane prismatic band refractor with holder..... { 100 200 }	174371	76
	Cat. No. 174276, $8\ 3/4$ in. Holophane prismatic band refractor with holder..... { 300 400 500 }		

Standard finish, black japan; galvanized iron finish can be furnished.

For details of sockets and reflectors see Pages 48 to 51.

MULTIPLE BRACKETS



Goose Neck 3/4 in. Pipe Bracket, with Parabolic Deflector, External Wiring

EQUIPPED WITH

Parabolic Deflector, External Wiring

COMPLETE UNIT
EXCLUDING LIGHT

Ref.
No.

122700



122



EQUIPPED WITH

Parabolic Deflector, External Wiring

COMPLETE UNIT
EXCLUDING LIGHT

Ref.
No.

122700



122





Standard model, also shown with external wiring and external wiring.

For details of construction and dimensions see Pages 44-45

MULTIPLE FIXTURES



Eye Suspension with Cross Arm Insulator Hanger

EQUIPPED WITH	FOR MUL- TIPLE LAMPS	COMPLETE UNIT (WITHOUT LAMP)	
	Watts	Cat. No.	App Ship per Fixt.
	Cat. No. 46219, 20 in. radial wave reflector.....	161383	42
	40 60		
	Cat. No. 174270, 20 in. dome radial wave re- flector . . .	174374	42
	100 200		
	Cat. No. 174273, 4 1/2 in. Holo- plane prismatic band refractor with holder	174375	50
	100 200		
	Cat. No. 174276, 8 1/2 in. Holo- plane prismatic band refractor with holder . . .	174376	50
	300 400		
	500		





Standard finish, black japan; galvanized iron finish can be supplied.

For details of sockets and reflectors see Pages 48 to 51.
For omission of hanger a deduction from price is made.

MULTIPLE FIXTURES



Cross Arm Suspension

EQUIPPED WITH	FOR MOUNTING ON A CROSS ARM	COMPLETE UNIT (OPTIONAL ACCESSORIES)	
		Part No.	Quantity per Unit
	1/2" x 1/2" x 1/2" (3/4")	174100	100
	1/2" x 1/2" x 1/2" (3/4")	174200	100
	1/2" x 1/2" x 1/2" (3/4")	174300	100
	1/2" x 1/2" x 1/2" (3/4")	174400	100

Fixtures made of steel (galvanized) and painted in black.

For detailed pricing and information, please refer to the

MULTIPLE FIXTURES



CAT. NO. 123753



CAT. NO. 123754

Cross Arm Suspension Fixtures with Parabolic Deflector

EQUIPPED WITH	COMPLETE UNIT (WITHOUT LAMP)	
	Cat. No.	Apprx. Ship. per Fixtu
Copper lined and reflector for 1 in. base lamp	123753	22
Galvanized iron hood and deflector for 1 in. base lamp	123754	22

Standard finish, black japan; galvanized iron finish can be ordered.

For details of sockets see Pages 48 to 51.

RAILWAY BRACKET



Five-Light Bracket for 600 Volt Railway Circuits

Cat.
No.

Descriptive

188877

Five-light bracket for 600 volt railway circuits .

REFLECTORS AND FITTINGS

Cat. No.	Descriptive	SHIP. WT.	
		Lb.	Qua tit
	The following reflectors are not standard but are listed for reference:		
155524	20 in. radial wave reflector for 40, 60, 80 and 100 c-p. series and 100 and 150 watt multiple lamps.....	122	10
155525	18 in. concentric reflector for 40, 60, 80 and 100 c-p. series and 100 and 150 watt multiple lamps.....	95	10
155526	20 in. concentric reflector for 250 and 400 c-p. series and 100, 150 and 250 watt multiple lamps.....	107	10
155528	18 in. concentric reflector with Holophane prismatic bowl refractor for 60, 80 and 100 c-p. series and 100 watt multiple lamps.....	300	20
155525	18 in. concentric reflector.....	95	10
158432	Refractor.....		
176568	Holder for refractor.....		
155529	20 in. concentric reflector with Holophane prismatic bowl refractor for 250 and 400 c-p. series and 200 watt multiple lamps.....	385	20
155526	20 in. concentric reflector.....	107	10
158298	Refractor.....		
176569	Holder for refractor.....		

REFLECTORS AND FITTINGS



Cat. No. 44217—30-In. Radial Wave Reflector
For 40, 60, 80 and 100 c-p. Series and 40, 60 and
100 Watt Multiple Lamps
Ship. Wt. per 20—131 Lb.



**Cat. No. 174270—30-In. Dome Radial
Wave Reflector**
For 40, 60, 80, 100, 250 and 400 c-p. Series
and 100 and 200 Watt Multiple Lamps
Ship. Wt. per 20—145 Lb.



Closed



Open

**Cat. No. 174273—6 1/2-In. Holophane Prismatic Band Refractor with Canopy
and Holder.** For 40, 60, 80 and 100 c-p. Series and 100 and 200 Watt Multiple
Lamps.
Ship. Wt. per 10—65 Lb.

Consists of:

Cat. No. 174272 Holder.

Cat. No. 174271 Refractor.



Closed



Open

**Cat. No. 174276—8 1/2-In. Holophane Prismatic Band Refractor with Canopy
and Holder.** For 250 and 400 c-p. Series and 300, 400 and 500 Watt Multiple
Lamps
Ship. Wt. per 10—80 Lb.

Consists of:

Cat. No. 174275 Holder.

Cat. No. 174274 Refractor.

SOCKETS AND RECEPTACLES FOR LAMPS WITH EDISON SCREW BASES

Cat. No.	Descriptive	Ship. Wt. in Lb. per 100
25708	Porcelain series socket and receptacle, complete, including iron yoke Cat. No. 25714, for use with Mogul screw base lamps.....	200
25711	Porcelain series socket only, for Mogul screw base lamps.....	112
25720	Porcelain series socket, only for medium screw base lamps.....	46
136722	Skeleton multiple socket for Mogul screw base lamps.....	52
129804	Porcelain multiple socket, for Mogul screw base lamps.....	112
129803	Porcelain multiple socket, for medium screw base lamps.....	112
GE069	Porcelain multiple socket with $\frac{1}{2}$ in. pipe tap, for Mogul screw base lamps.....	330
GE427	Porcelain multiple socket with yoke for $\frac{1}{2}$ in. pipe, for medium screw base lamps....	80
25712	Porcelain receptacle with clips and iron yoke. This is Cat. No. 25708 less Cat. No. 25711..	103
25713	Porcelain receptacle with clips only.....	54
25714	Iron yoke ($\frac{1}{4}$ in.-18 thread) with two screws Cat. No. 10252 Used in Cat. No. 25712...	50
46627	Keyless receptacle.....	30
128812	Adapter nut.....	50
128813	$\frac{1}{2}$ by $3\frac{1}{2}$ in. nipple ..	50
138636	$\frac{1}{2}$ by $1\frac{1}{2}$ in. nipple ..	40
164626	$\frac{1}{2}$ in. close pipe nipple ..	40
65951	Aluminum disk film cutout. Tested for 110 volts; probable limit of breakdown, 250 to 450 volts	$\frac{1}{4}$
*147969	Lead disk film cutout. Tested for 70 volts; probable limit of breakdown, 70 to 220 volts	$\frac{1}{4}$

* Designed for use with lamps operated from S.L. transformers.

NOTE.—With each shipment of 12 or less of the above series sockets a package of 15 disk film cutouts, Cat. No. 65951, is included.

SOCKETS AND RECEPTACLES FOR LAMPS
WITH EDISON SCREW BASES



158636



128813



128812



25712



46627



GE 427



GE 069



25711



25720



129804

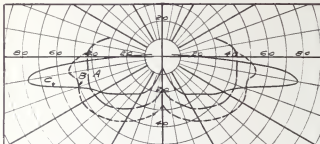


129803



CAT. NO. 156722

INCANDESCENT FIXTURES

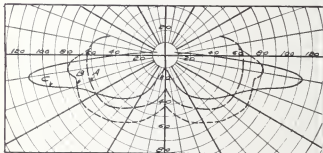


40 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

A—20-in. radial wave reflector, Cat. No. 46219.

B—20-in. radial wave reflector—dome type, Cat. No. 174270.

C—6½-in. Holophane prismatic band refractor and holder, Cat. No. 17427



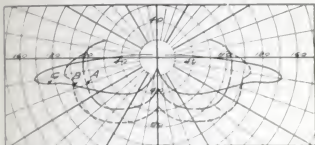
60 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

A—20-in. radial wave reflector, Cat. No. 46219.

B—20-in. radial wave reflector—dome type, Cat. No. 174270.

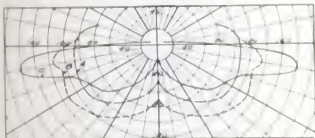
C—6½-in. Holophane prismatic band refractor and holder, Cat. No. 17427

INCANDESCENT FIXTURES



50 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

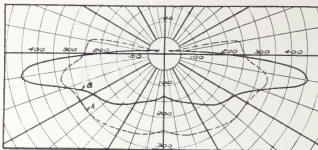
- A—20-in. radial wave reflector, Cat. No. 46219.
- B—20 in. radial wave reflector—luna type, Cat. No. 74270
- C—6 in. Holophane prismatic band reflector and holder, Cat. No. 74271



100 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

- A—20-in. radial wave reflector, Cat. No. 46219.
- B—20-in. radial wave reflector—dome type, Cat. No. 74270
- C—6 in. Holophane prismatic band reflector and holder, Cat. No. 74271

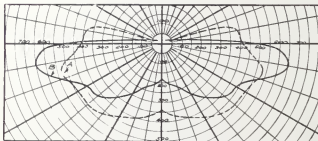
INCANDESCENT FIXTURES



250 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

A—20-in. radial wave reflector—dome type, Cat. No. 174270.

B—8½-in. Holophane prismatic band refractor and holder, Cat. No. 174276.

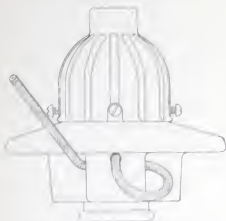


400 C-P. SERIES MAZDA LAMP SHOWING DISTRIBUTION WITH

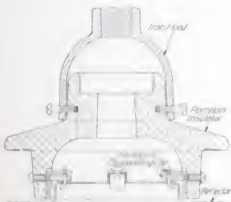
A—20-in. radial wave reflector—dome type, Cat. No. 174270.

B—8½-in. Holophane prismatic band refractor and holder, Cat. No. 174276.

INCANDESCENT FIXTURES

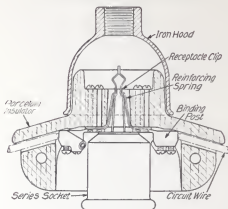


METHOD OF WIRING LEADS THROUGH INSULATOR ARM

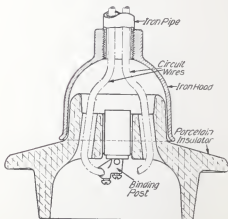


CROSS-SECTION OF HOOD AND BASE
LATER FOR WIRING READY
SHOWING METHOD OF WIRING
PORTING, ETC.

INCANDESCENT FIXTURES

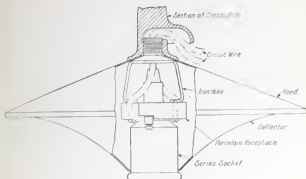


CROSS SECTION OF HOOD AND INSULATOR FOR SERIES BRACKET SHOWING EXTERNAL WIRING

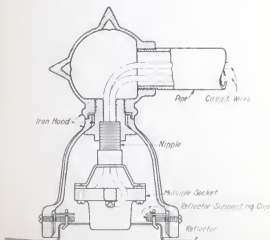


CROSS SECTION OF HOOD AND INSULATOR FOR SERIES BRACKET SHOWING INTERNAL WIRING

INCANDESCENT FIXTURES

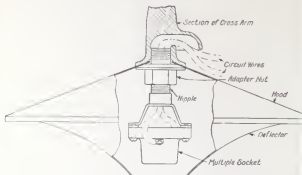


CROSS SECTION OF HOOD AND PARABOLIC DEFLECTOR FOR SERIES BRACKET OR CENTER SPAN FIXTURE SHOWING METHOD OF WIRING

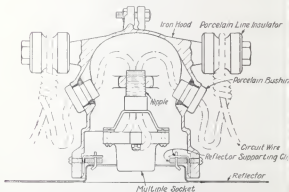


CROSS SECTION OF HOOD FOR RIGHT ANGLE JOINT MULTIPLE BRACKET SHOWING METHOD OF WIRING AND OF HOLDING REFLECTOR

INCANDESCENT FIXTURES



CROSS SECTION OF HOOD AND PARABOLIC DEFLECTOR FOR MULTIPLE BRACKET OF CENTER SPAN FIXTURE SHOWING METHOD OF WIRING



CROSS SECTION OF HOOD FOR CROSS ARM SUSPENSION MULTIPLE FIXTURE SHOWING METHOD OF WIRING AND OF HOLDING REFLECTOR

DIMENSIONS OF INCANDESCENT FIXTURES



Fig. A



Fig. B

Descriptive	APPROX. DIMEN IN INCHES		For Illustration see Pages
	Light Center to Pole See Fig. A	Overall Height See Fig. A	
BRACKETS			
Bishop's Crook	20 ³ / ₄	31 ¹ / ₂	16, 17
Round Bend	40 ³ / ₄	35 ³ / ₄	17, 18
Right Angle Bend	48	24 ¹ / ₂	18, 35
Right Angle Joint (Long)	48	25 ¹ / ₂	19, 34
Ornamental Goose Neck	48	37 ¹ / ₂	20, 36
Right Angle Joint (Short)	20	16 ¹ / ₂	21, 37
Goose Crook	48	19 ³ / ₄	22, 39
Plain Goose Neck with Petticoat Insulator	48	28	23, 38
Telescoping Goose Neck with Petticoat Insulator and Deflector	48-64	34 ¹ / ₂	24, 40
	48	26 ¹ / ₂	25, 41
CENTER SPAN FIXTURES SERIES			
Pole Suspension with Cross Arm Insulator Hanger		14 ¹ / ₂	26
Plain Insulator Center Span Suspension		8 ³ / ₄	27
Cross Arm Suspension		8 ¹ / ₂	28
Cross Arm Suspension with Petticoat Insu- lator		13 ³ / ₄	29
Eye Suspension		6	30
Cross Arm Suspension with Deflectors		12 ¹ / ₂	31
MULTIPLE			
Eye Suspension with Cross Arm Insulator Hanger		16	42
Eye Suspension		7 ¹ / ₂	43
Cross Arm Suspension with Petticoat Insu- lator		13 ¹ / ₂	44
Cross Arm Suspension		7 ³ / ₄	45
Cross Arm Suspension with Deflectors		12 ¹ / ₂	46

INCANDESCENT FIXTURES



Dimensions of
Standard 1/4 In. Pipe

Dimensions of
Standard 1 1/4 In. Pipe

PIPE DIMENSIONS FOR STREET
LIGHTING SYSTEM BRACKETS



